

# MAXGROUT™ 60

*Free flow, High strength, non-shrink, Cementitious Precision Grout*

Maxgrout 60 is a cement based non-metallic, non-shrink, dual expansion, free flow grout supplied as a dry powder. Maxgrout 60 has excellent flowability and is the most versatile grout.

Maxgrout 60 is a blend of Portland cement, graded fillers and chemical additives which impart controlled expansion in the plastic state while minimising water demand. The low water demand ensures high early strength. The graded fillers are designed to assist uniform mixing and produce a consistent grout.

## Uses

Maxgrout 60 is used for the installation of large and heavy machinery base plates, crane rails, stanchion base plates, bridge bearings, bolt pockets and all other areas requiring precision grouting. Can be used for filling precast joint sand tie holes with adjustable consistency. Can be used for reinstating damaged structural elements by placing form work. Can be used for anchoring bolts in rocky strata

## Benefits

- Ready to use, requires only addition of water.
- Highly flowable and self leveling.
- Able to fill, intricate and narrow voids.
- Ensures highest, effective bearing area.
- High early strength without the use of chlorides.
- High strength ensure the durability of the hardened grout.
- No bleeding or segregation.
- Compensates for shrinkage in both plastic and hardened states.
- No metallic iron content to cause staining/corrosion
- The expansion system ensures dimensional stability by offsetting shrinkage.

## Technical support

An experienced technical advisory team is available to give technical service on request.

## Properties

### Compressive strength : (BS 1881 - Part 116: 1983)

Age (days)	Compressive strength (N/mm <sup>2</sup> )	
	Flowable (W/P 0.18)	Pourable (W/P 0.16)
1	27	30
3	45	55
7	50	65
28	65	75

### Compressive strength with addition of 10mm aggregates

Age (days)	Compressive strength (N/mm <sup>2</sup> ) W/P 0.18		
	% of 10mm aggregates ( IS 516 - 1959)		
	50%	75%	100%
1	26	29	31
3	48	52	55
7	56	59	62
28	70	75	78

### Flexural strength ( BS 4551, 1998)

Age	Flexural strength (N/mm) <sup>2</sup>
	W/P 0.18
1	2.5
3	7.0
7	9.0
28	10.0

**Tensile strength** (W/P - 0.18) 3.5N/mm<sup>2</sup> @ 28 days

**Pullout bond strength** (W/P - 0.18) 10 N/mm<sup>2</sup> @ 7 days  
15 N/mm<sup>2</sup> @ 28 days

**Time for expansion** (after mixing ) Start : 20 minutes  
Finish : 120 minutes

**Freshwet density** Approximately 2225g/m<sup>3</sup> depending on actual consistency used

**Young's modulus** (ASTM 469 - 94) 28 kN/mm<sup>2</sup>

**Dynamic load resistance** Specimens of MAXGROUT 60 remained undamaged even after subjecting them to alternate loads of 5N/mm<sup>2</sup> & 25N/mm<sup>2</sup> at the rate of 500cycles /minute for two million cycles.

**Coefficient of thermal expansion**  $11 \times 10^{-6} / ^\circ\text{C}$

**Unrestrained expansion** upto 2.5% in the plastic state enables to overcome shrinkage

Longer term expansion in the hardened state is designed to comply with the requirements of ASTM C1107 to Compensate for drying shrinkage.

**Pressure to restrain** : 0.004 N/mm<sup>2</sup>  
approx. **plastic expansion**

# MAXGROUT™ 60

**Flow characteristics** : The maximum distance of flow is governed by the gap width and the head of the grout. Typical data for flow design assuming grout is poured immediately after mixing is given in the table below :

Grout Max. consistency	Gap width (mm)	flow distance in mm		
		50mm head	100mm head	250mm head
Flowable	30	350	1000	1500
	40	500	1500	2000
	50	900	2000	3000+

**Note** : This table is based on the following factors  
 temperature- 30°C ; Water saturated substrate;  
 Minimum unrestricted flowwidth is 300mm.

## Specification Clauses

### Performance specification

All grouting shown on the drawing must be carried out with are packed cement based product which is chloride free.

It shall be mixed with clean water to the required consistency. The grout must not bleed or segregate.

A positive volumetric expansion shall occur while the grout is plastic by means of gaseous system.

### Typical detail of stanchion base plate

The compressive strength of the grout must exceed 50 N/mm<sup>2</sup> at 7 days and 60 N/mm<sup>2</sup> at 28 days.

The flexural strength of grout must exceed 9N/mm<sup>2</sup> @ 28 days. Fresh wet density of the mixed grout must exceed 2150 kg/m<sup>3</sup>.

The storage, handling and placement of the grout must be in strict accordance with the manufacturer's instructions.

## Instructions for use

### Preparation

#### Foundation surface

The substrate surface must be free from oil, grease or any loosely adherent material. If the concrete surface is defective or has laitence, it must be cut back to a sound base. Bolt holes and fixing pockets must be cleaned of any debris.

#### Pre-soaking

Several hours prior to placing, the concrete substrates should be saturated with fresh water.

Immediately before grouting takes place any free water should be removed with particular care being taken to blow out all bolt holes and pockets.

### Base Plate

It is essential that this is clean and free from oil, grease or scale. Air pressure relief holes should be provided to allow venting of any isolated high spots.

### Levelling Shims

If these are to be removed after the grout has hardened, they should be treated with a thin layer of grease.

### Formwork

The form work should be constructed to be leakproof. It can be achieved by using foam rubber strip or mastic sealant beneath the constructed form work and between joints.

In some cases it is practical to use a sacrificial semi-dry sand and cement form work. The form work should include outlets for pre-soaking.

### Unrestrained surface area

This must be kept to a minimum. Generally the gap width between the perimeter formwork and the plate edge should not exceed 150mm on the pouring side and 50mm on the opposite side. It is advisable, where practical, to have no gap at the flank sides.

## Mixing

For best results a mechanically powered grout mixer should be used. When quantities up to 50kg are used, a heavy duty slow speed drill (400-500 rpm) fitted with a paddle is suitable. Larger quantities will require a heavy duty mixer.

To enable the grouting operation to be carried out continuously, it is essential that sufficient mixing capacity and labour should be available. Use of a grout holding tank with provision to gently agitate the grout may be required.

## Consistency of grout mix

The quantity of clean water required to be added to a 30 kg bag to achieve the desired consistency is given below :

Pourable: 4.8 litres

Flowable: 5.4 litres

The selected water content should be accurately measured into the mixer. The total content of the MAXGROUT - 60 bag should be slowly added and continuous mixing should take place for 5 minutes. This will ensure that the grout has a smooth even consistency.

## Placing

At 30°C place the grout within 20 minutes of mixing to gain full benefit of the expansion process. Maxgrout -60 can be placed in thicknesses up to 100mm in a single pour when used as an underplate grout. For thicker sections it is necessary to fill

# MAXGROUT™ 60

out MAXGROUT- 60 with well graded silt free washed and SSD condition aggregate to minimise heat build up.

Typically a 5-10mm aggregate is suitable. 50 - 100% aggregate by weight of Maxgrout - 60 can be added.

Any bolt pockets must be grouted prior to grouting between the substrate and base plate.

Continuous grout flow is essential. And sufficient grout must be prepared before starting. The time taken to pour a batch must be regulated to the time to prepare the next one.

## Hopper system

### Removable hopper :

For large pours the grout may be hand placed or pumped into a removable hopper ( trough)

Pouring should be from one side of the void to eliminate any air or pre-soaked water becoming trapped under the base plate. It is advisable to pour the grout across the shortest distance of travel. The grout head must be maintained at all times so that a continuous grout flow is achieved.

Where large volumes have to be placed Maxgrout-60 may be pumped. A heavy duty diaphragm pump is recommended for this purpose. Screw feed and piston pumps may also be suitable.

## Curing

On completion of the grouting operation, exposed areas should be thoroughly cured. This should be done by the use of Maxcure CC 75 curing membrane and/or wet hessian.

## Limitations

Low temperature working : Warm water for grouting is recommended when contact surface temperatures are 10°C and below to accelerate strength development. Form work should be kept in place for minimum 36 hours.

High temperature working : At ambient temperature of 40°C and above cold water (below 20°C) should be used for mixing.

## Health and Safety instructions

Maxgrout-60 is alkaline and should not come into contact with skin and eyes. Inhalation of dust during mixing should be avoided. Gloves, goggles and dust mask should be worn. If contact with skin occurs, it shall be washed with clean water. Splashes to eyes should be washed immediately with plenty of clean water and medical advice sought.

### Fire

Maxgrout-60 is non flammable.

## Storage

### Shelf life

Maxgrout -60 has a shelf life of 6 months if kept in a dry store in sealed bags. If stored in high temperature and high humidity locations, the shelf life may be reduced.

## Packing

Maxgrout - 60 is supplied in 30 kg moisture resistant bags.

### Yield

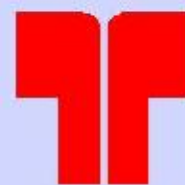
Consistency	Pourable	Flowable
15.9 Yield ( litres)	15.6	15.9

## Other segments :

- Concrete Admixtures • Surface Treatments • Grouts & Anchors • Repair & Rehabilitation
- Protective Coatings • Industrial Flooring • Waterproofing • Sealants • Adhesives
- Cement Grinding Aids

**Disclaimer:** The information contained in this document is true and accurate to the best of our knowledge and is based on our experience & test results. It is always the Company's endeavor to give true and accurate information however as it does not have any direct and/or continuing control on the use of the Products, the Company cannot accept any liability, direct or indirect as a consequence of the use of Products. In the event of any doubt upon any critical parameter it is advisable to seek clarification from our technical representative.

We reserve the right to amend any product details without notice. Copyright© Thermax Limited Edition: (TCC/TDS/0915)



**THERMAX**

Thermax Limited

Environment House, Plot No.90-92  
BG Block, MIDC, Bhosari,

Pune 411 026, India.

Tel: +91-20-

67156152, 67156000

Fax: +91-20-27120206

Customer Care: 18002090115 (India toll free)

Email : [chemicals@thermaxindia.com](mailto:chemicals@thermaxindia.com)

Ahmedabad

Tel: +91-79-26575408 • Fax: +91-79-65577270

Bengaluru

Tel: +91-80-22371721 • Fax: +91-80-22371726

Chennai

Tel: +91-44-24303400 • Fax: +91-44-24353841

Delhi

Tel: +91-11- 46087200 • Fax: +91-11- 26145311

Hyderabad

Tel: +91-40-23253700 • Fax: +91-40-23253799

Kolkata

Tel: +91-33-66070800 • Fax: +91-33-66070999

Mumbai

Tel: +91-22-67542222 • Fax: +91-22-22040859

Thermax World-wide

UK, USA, UAE, Germany, Belgium, Denmark, Russia,

Saudi Arabia, Thailand, Malaysia, Bangladesh,

Sri Lanka, China, Philippines, Peru, Chile, Kenya,

Nigeria, Brazil, Indonesia

Website: [www.thermaxindia.com](http://www.thermaxindia.com)

## Thermax Business Portfolio

### Chemicals

### Absorption Cooling

### Air Pollution Control

### Boilers & Heaters

### Power

### Water & Waste Solutions

### Solar